

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/883,845	SMART ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Juan A. Torres	2631	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment - After Non-Final Rejection filed on 01/20/2006.
2. ☒ The allowed claim(s) is/are 4-10, 24-44 and 46.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |   |
|---|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)                       |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                               |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance              |
|   | 9. <input type="checkbox"/> Other _____.  |

### EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Lee Henderson on 2/27/2006. The application has been amended as follows:

1.- In page 22 at the end of the second paragraph the recitation

"An output of the first sliding-window transform 921 is provided to an input of an M-th demapper 933."

is changed to

"An output of the first sliding-window transform 921 is provided to an input of an M-th demapper 931."

2.- As per claim 6, the recitation in lines 6-9 of claim 6

"said receiver further comprising a first sliding window transform configured to transform data from said first channel using a first transform length and a second sliding window transform configured to transform data from said second channel using a second transform length"

it is changed to

"said receiver further comprising a first sliding window transform configured to transform said received stream of data samples to said first channel using a first transform length and a second sliding window transform configured to transform said

received stream of data samples to said second channel using a second transform length"

3.- As per claim 24, the recitation in lines 9-12 of claim 24

"a first sliding-window transform configured to transform said first sub-band digital data stream into a first channel data stream; and a second sliding-window transform configured to transform said first sub-band digital data stream into a second channel data stream"

it is changed to

"a first sliding-window transform configured to transform said first sub-band digital data stream into a first channel data stream using N time-domain input values to generate M frequency domain output values; and a second sliding-window transform configured to transform said first sub-band digital data stream into a second channel data stream using N input values to generate M frequency domain output values, where the value N used for said second channel is different from the value of N used for said first channel".

### ***Allowable Subject Matter***

Claims 4-10, 24-44 and 46 are allowed.

The following is an examiner's statement of reasons for allowance: claim 4-10, 24 – 44 and 46 are allowed because the references cited fail to teach, as applicant has, a receiver comprising a time-to-frequency converter configured to receive a stream of data samples and calculate M streams of output values, each of said output values using N input values, where the value of N is selected on a channel-by-channel basis

such that a first channel uses a value for N that is different from a value of N used by a second channel, using a first sliding window transform configured to transform data to the first channel using a first transform length and a second sliding window transform configured to transform data to the second channel using a second transform length, as the applicant has claimed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Liu (US 6065060 A) discloses a sub-band filter for separating a received analog signal into a plurality of separate sub-band signals corresponding to a plurality of sub-bands, where at least one of said sub-bands comprises a plurality of sub-channels, said plurality of sub-channels comprising a first sub-channel and a second sub-channel; an analog to digital converter configured to convert a first sub-band signal into a first sub-band digital data stream; a transform configured to transform the sub-band digital data stream into a channel data stream (figure 6 block 680; figure 1B block 81; figure 1E block 84). Marks (US 5373460 A) discloses a method and apparatus for generating sliding tapered windows and sliding window transforms that reduce the complexity of the transform requiring fewer operations (abstract). Kim (US 6690717 B1) discloses a two-step transceiver system having a discrete multi-tone

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transceiver system and a cosine modulated filter bank (CMFB) transmultiplexer (see figure 5). Liu, Marks and Kim don't disclose using a first sliding window transform configured to transform data to the first channel using a first transform length and a second sliding window transform configured to transform data to the second channel using a second transform length where the value of N is selected on a channel-by-channel basis such that a first channel uses a value for N that is different from a value of N used by a second channel

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juan A. Torres whose telephone number is (571) 272-3119. The examiner can normally be reached on Monday-Friday 9:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patel K. Jayanti can be reached on (571) 272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Juan Alberto Torres  
2-27-2006

  
**KEVIN BURD**  
**PRIMARY EXAMINER**